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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,708	02/03/2004	Christian Gartner	100727-63/ Heraeus 414	1315

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EXAMINER	
SINGH, SUNIL K	

ART UNIT	PAPER NUMBER
3732	

MAIL DATE	DELIVERY MODE
02/14/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/770,708	GARTNER ET AL.	
	Examiner	Art Unit	
	Sunil K. Singh	3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-28* is/are pending in the application.

4a) Of the above claim(s) *27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-26 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/13/2010 has been entered.

Election/Restrictions

2. Newly submitted claim 27 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 27 is derived from specie of the generic claim 19. Claim 27 is an alternate embodiment of manufacturing the final product.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 27 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 18,19,22,25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas in view of Dillier (US 2002/0110786)

Thomas discloses a method and corresponding system for carrying out said method of creating a dental prosthesis comprising scanning a patient's teeth (column 10, lines 10-14); recording and digitizing 3-D anatomical relationships in an oral cavity (i.e. step 20); and processing the data (i.e. digital map Q) received from the anatomical relationships in such a way that relevant anatomical structures for virtual placement of teeth (i.e. digital map M) are securely affixed so that a complete virtual model (i.e. merged image N) can be obtained for direct manufacture of a denture base according to the digital data (column 12, lines 1-3 and column 14, lines 51-55). Thomas also discloses the step of simulating mandibular movements on a computer by providing various views (i.e. R) as a positioning aid (column 13, lines 45-49). Thomas additionally discloses the prosthesis can be rapid prototyped (column 10, lines 53-57). Examiner further notes that the scanning of the patient's oral cavity includes the entire cavity (column 13, lines 14-19), wherein occlusion rims and bite rims are held in the art as equivalent structures since occlusion is defined as the way the upper and lower teeth bite together. However, Thomas fails to disclose a method that includes: scanning fabricated teeth to produce 3D data records of fabricated teeth; selecting fabricated teeth from 3D data records; and virtually placing the teeth into the virtual model.

Dillier teaches a method of manufacturing a dental prosthesis (abstract) that includes: scanning fabricated teeth to produce 3D data records of fabricated teeth; selecting fabricated teeth from 3D data records; and virtually placing the teeth into the virtual model [0045] (see claim 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Thomas to include the method taught by Dillier, in order to provide a method of manufacturing a dental prosthesis that is less error prone and easier to automate.

4. Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas in view of Dillier as applied to claim 19 above, and further in view of Baumrind (US 6,621,491).

Thomas/Dillier discloses a method of creating a dental prosthesis as previously described but fails to show that an oral situation is recorded directly using a 3-D camera. Baumrind, however, teaches a method for recording 3-D diagnostic data of an oral situation using a 3-D camera (30, Figure 1; col 3, ln 35-40 and 48-51). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the applicant's invention to record an oral situation using a 3-D camera in order to provide a holistic view of the patient for treatment purposes as taught by Baumrind.

5. Claim 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas in view of Dillier as applied to claim 19 above, and further in view of Chishti (US 5,975,893).

Thomas/Dillier discloses a method of creating a dental prosthesis as previously described but fails to show scanning a plaster model. Chishti, however, teaches scanning a plaster cast of teeth to obtain 3-D data (col 5, ln 38-48). Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant's invention to scan a plaster model so that the patient is not exposed to X-rays as taught by Chishti.

6. Claims 23,24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomas in view of Dillier as applied to claim 19 above, and further in view of Jordan et al. (US 6,152,731).

Thomas/Dillier discloses the method of creating a dental prosthesis as previously described but fails to show the step of inspecting function and occlusion on the computer. Jordan, however, teaches a method for creating a dental model whereby occlusion of a virtual model is inspected on the computer (col 23, ln 62-64). Therefore, it would have been obvious to one having ordinary skill in the art at the time of Applicant's invention to inspect function and occlusion of the digitized virtual model as taught by Jordan in order to test it to ensure it has been created properly and is in working order. As to claim 24, Jordan further discloses the placement of teeth is manually corrected and a new calculation is performed to adapt to the bite and occlusion data (col 21, ln 17-45).

Response to Amendment

7. The declaration under 37 CFR 1.132 filed 12/13/2010 is sufficient to overcome the objection to the specification.

Response to Arguments

8. Applicant's arguments filed 12/13/2010 have been fully considered but they are not persuasive. Applicant argues that Dillier does not fulfill the deficiencies of Thomas because Dillier constructs a 3D model of a die which is not an oral cavity. The claim calls for recording and digitizing a 3D, anatomical relationship in an oral cavity. Although Thomas already shows this relation, it is the Examiners position that Dillier teaches this as well. Dillier shows in Figs 18A-18D that the dies are oriented in relation to the patient's dentition and therefore are recorded in anatomical relationship in an oral cavity. The Applicant further argues that Dillier does not disclose a processing module that fits data for prefabricated dental prostheses into the virtual model and thereby creates a virtual model with integrated dental prosthetic teeth. However, Dillier does in fact teach a library of pre-fabricated tooth models [0045] that are used in a virtual model of the dentition. Therefore, it is the Examiner's position that Dillier meets this limitation as claimed. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunil K. Singh whose telephone number is (571) 272-3460. The examiner can normally be reached on Monday-Friday (Increased Flex Schedule).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris L. Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2/11/2011

/Sunil K Singh/
Examiner, Art Unit 3732